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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/603,546

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Wei-Yi Lin

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03/08/2005

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EXAMINER

RIELLEY, ELIZABETH A

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/603,546	<b>Applicant(s)</b> LIN ET AL.	
	<b>Examiner</b> Elizabeth A. Rielley	<b>Art Unit</b> 2879	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: figure 1b is missing reference numbers 132 and 134 as mentioned on page 6 line 26; figure 1c is missing reference number 134 as mentioned on page 7 line 8.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference numbers 5 and 5' in figure 1c; reference number 210 in figure 2; reference number 310 in figure 3; reference numbers 132, 136, and 520 in figure 5.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

Art Unit: 2879

the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-5, 8, 10, 12, 14, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Toyoda et al (JP 2001-138482).

6. In regard to claims 1, 3-5, and 10, Toyoda et al ('482) teaches a method of repositioning display spacers using inductive attraction, comprising: providing spacers (2, 1) susceptible to inductive attraction (paragraph 23); providing an inductive chuck (4), in this case a magnet or an electrostatic chuck (paragraph 22), to attract the spacers (paragraph 22); providing a substrate (5); using the inductive chuck to position the spacers in desired positions on the substrate (figures a-d; paragraphs 19-24).

7. In regard to claims 8 and 12, Toyoda et al ('482) teaches that the spacers have magnetic/electrostatic materials attached thereto (paragraph 22).

8. In regard to claim 14, Toyoda et al ('482) teaches that the spacers are made of metal, alloy, dielectric, ceramic, or glass materials, or a combination thereof (paragraph 19).

Art Unit: 2879

9. In regard to claim 21, Toyoda et al ('482) teaches using an alignment step when locating the spacer onto a desired position on the substrate (paragraph 29).

*Claim Rejections - 35 USC § 103*

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Amrine et al (US 5717287).

12. In regard to claim 2, Toyoda et al ('482) teaches all the limitations set forth, as described above, except the spacers are spacers of a field emission display. Amrine et al ('287) discloses a method of affixing spacers (150; figure 3) to a field emission display using a chuck to position the spacers (170; column 4 lines 4-28) in order to provide an irreversible, inert bond to all types of flat panel displays, including field emission displays (column 1 lines 53-56 and 12-13). It would have been obvious as the time of the invention to one of ordinary skill in the art to combine the method of positioning spacers of Toyoda et al ('482) with the field emission displays of Amrine et al ('287). Motivation for combining would be to provide an irreversible, inert bond to all types of flat panel displays, including field emission displays.

Art Unit: 2879

13. In regard to claim 15, Toyoda et al ('482) teaches all the limitations set forth, as described above, except the spacers are cylindrical, X-, I-, L-, or bar-shaped or a combination thereof. Amrine et al ('287) discloses the shape of the spacers are cylindrical, X-, I-, L-, or bar-shaped or a combination thereof (column 3 lines 7-10) in order to prevent breakage and cracking during thermal cycles in the manufacturing of the display (column 3 lines 1-10). It would have been obvious as the time of the invention to one of ordinary skill in the art to combine the method of positioning spacers of Toyoda et al ('482) with the shape of the spacers of Amrine et al ('287). Motivation for combining would be to prevent breakage and cracking during thermal cycles in the manufacturing of the display.

14. In regard to claims 17-20, Toyoda et al ('482) teaches all the limitations set forth, as described above, except the substrate is either an anode or cathode plate of a flat panel display and on a field emission display. Amrine et al ('287) discloses manufacturing the spacer on either the anode (110; figure 1 and 4; column 4 lines 15-28) or cathode (230; figure 6; column 5 line 28 to column 6 line 17) on both flat panel displays and field emission displays (column 1 lines 10-13) in order to provide an irreversible, inert bond to both displays (column 1 lines 53-56 and 10-13). It would have been obvious as the time of the invention to one of ordinary skill in the art to combine the method of positioning spacers of Toyoda et al ('482) with the structure of the display of Amrine et al ('287). Motivation for combining would be to provide an irreversible, inert bond to both types of displays.

15. Claims 6, 7, 9, 11, 13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Barton et al (US 6617772).

16. In regard to claims 6 and 11, Toyoda et al ('482) discloses all the limitations set forth, as described above, except the spacers are made of magnetic/electrostatic materials. Barton et al ('772)

Art Unit: 2879

teaches the spacers are made of magnetic/electrostatic materials (column 3 lines 64-65; claim 44) in order to produce an improved display (abstract). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the spacer material of Barton et al ('772). Motivation for combining would be to produce an improved display.

17. In regard to claim 7, Toyoda et al ('482) discloses all the limitations set forth, as described above, except spacers have magnetic/electrostatic materials deposited thereon. Barton et al ('772) teaches spacers have magnetic materials deposited thereon (column 3 lines 64-65; claim 44) in order to produce an improved display (abstract). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the spacer material of Barton et al ('772). Motivation for combining would be to produce an improved display.

18. In regard to claims 9 and 13, Toyoda et al ('482) discloses all the limitations set forth, as described above, except spacers have two or more layers, at least one of which is made of magnetic/electrostatic materials. Barton et al ('772) teaches spacers have two or more layers, at least one of which is made of magnetic/electrostatic materials (column 3 lines 64-65; claim 44; column 30 lines 20-30) in order to produce an improved display (abstract). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the spacer material of Barton et al ('772). Motivation for combining would be to produce an improved display.

19. In regard to claim 16, Toyoda et al ('482) discloses all the limitations set forth, as described above, except the shapes of spacers have two or more cross points, comprising comb, lattice, grid, or zig-

Art Unit: 2879

zag shapes or a combination thereof. Barton et al ('772) teaches the shapes of spacers have two or more cross points, comprising comb, lattice, grid, or zig-zag shapes or a combination thereof (figure 7) in order to produce an improved display (abstract). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the spacer shape of Barton et al ('772). Motivation for combining would be to produce an improved display.

20. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Yakou et al (US 5855637).

21. Toyoda et al ('482) discloses all the limitations set forth, as described above, except the alignment step comprises use of Charge-Coupled Device (CCD) and alignment marks. Yakou et al ('637) teaches the alignment step comprises use of Charge-Coupled Device (CCD) (36A and B; figure 1; column 8 lines 35-45) and alignment marks (2b and 2c; figure 9; column 11 lines 49-57) in order to form a stronger bond between the spacer and substrate (column 4 line 66 to column 5 line 4). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the alignment step of Yakou et al ('637). Motivation for combining would be to form a stronger bond between the spacer and substrate.

### ***Conclusion***

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alwan (US 6392334) and Yoshimura et al (US 6618112) teach spacers made specific material. Beeteson et al (US 6177759) disclose specific shapes of spacers.



23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Elizabeth Rielley**

**Examiner**  
**Art Unit 2879**

*msy 3/6/05*  
*Mariceli Santiago*  
*Art 2879*